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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,269	10/04/2006	Yusuke Konagai	YAMA:133	9215
37013 7590 11/29/2007 ROSSI, KIMMS & McDOWELL LLP. P.O. BOX 826 ASHBURN, VA 20146-0826			EXAMINER MONIKANG, GEORGE C	
			ART UNIT 2615	PAPER NUMBER
			MAIL DATE 11/29/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/585,269

Applicant(s)

KONAGAI, YUSUKE

Examiner

George C. Monikang

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :10/1/2007, 9/27/2007, 10/4/2006, 8/7/2006.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Hooley et al, WO 01/23104 A2 (Hooley et al is cited in IDS filed 8/7/2006).

Re Claim 3, Hooley et al discloses the audio signal supply apparatus, which supplies an audio signal to a loudspeaker array constituted by a plurality of loudspeaker units, characterized by comprising: a branching unit that branches an input audio signal into two or more signals (fig. 15: 1504; page 28, lines 21-24); a first processing unit that performs a delay process and/or a weighting process for of the signal that is obtained by branching one audio signal and is to be supplied to the loudspeaker units in accordance with first provided directivity control information (fig. 15: 1506; page 28, lines 21-27; page 10, lines 14-17); a second processing unit that performs a delay process and/or a weighting process for other signal that is obtained by branching one audio signal and that is to be supplied to the loudspeaker units in accordance with second directivity control information that is provided (fig. 15: 1506; page 28, lines 21-27; page 10, lines 14-17); a directivity control unit that generates the first directivity control information and the second directivity control information so that a directional characteristic of the loudspeaker array obtained by the first process differs from a directional characteristic

of the loudspeaker array obtained by the second process, and supplying the generated information respectively to the first processing unit and the second processing unit (fig. 15: 1506; page 28, lines 21-27; page 10, lines 14-17); and an adding unit that adds the audio signal processed by the first processing unit to the audio signal processed by the second processing unit (fig. 11: 506).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 4 & 6 are rejected under 35 U.S.C. ^{103(a)}~~102(a)~~ as being ^{unpatentable over}~~anticipated by~~

G.M.

Hooley et al, WO 01/23104 A2 in view of Yanagawa et al, US Patent 5,233,664 (Hooley et al is cited in IDS filed 8/7/2006).

Re Claim 1, Hooley et al discloses an audio signal supply apparatus for supplying an audio signal to a loudspeaker array constituted by a plurality of

loudspeaker units (abstract), characterized by comprising: a delay unit that performs a delay process for each of audio signals to be supplied to the loudspeaker units in accordance with provided delay control information (page 18, lines 3-8); a weighting unit that weights each of the audio signal to be supplied to the loudspeaker units in accordance with gain control information that is provided (page 18, lines 17-28); a storage unit that stores a first directivity parameter (page 10, lines 14-17; page 9, lines 16-20), and a second directivity parameter (page 10, lines 14-17; page 9, lines 16-20); an input unit that receives a selection instruction for the directional characteristic (page 10, lines 14-17; page 9, lines 16-20); and a directivity control unit that selects one of the directivity parameters in accordance with the input selection instruction, generates the delay control information and the gain control information based on the selected directivity parameter, and supplies the delay control information and the gain control information to the delay unit and the weighting unit, respectively (fig. 15: 1508, 1510; page 28, lines 21-27); but fails to disclose a directive parameter which sets a directional characteristic for the loudspeaker as a narrow directivity and sets another directional characteristic for the loudspeaker as a wide directivity. However, Yanagawa et al does (col. 1, lines 1-22).

Taking the combined teachings of Hooley et al and Yanagawa et al as a whole, one skilled in the art would have found it obvious to modify the audio signal supply apparatus for supplying an audio signal to a loudspeaker array constituted by a plurality of loudspeaker units (abstract), characterized by comprising: a delay unit that performs a delay process for each of audio signals to be supplied to the loudspeaker units in

accordance with provided delay control information (page 18, lines 3-8); a weighting unit that weights each of the audio signal to be supplied to the loudspeaker units in accordance with gain control information that is provided (page 18, lines 17-28); a storage unit that stores a first directivity parameter (page 10, lines 14-17; page 9, lines 16-20), and a second directivity parameter (page 10, lines 14-17; page 9, lines 16-20); an input unit that receives a selection instruction for the directional characteristic (page 10, lines 14-17; page 9, lines 16-20); and a directivity control unit that selects one of the directivity parameters in accordance with the input selection instruction, generates the delay control information and the gain control information based on the selected directivity parameter, and supplies the delay control information and the gain control information to the delay unit and the weighting unit, respectively (fig. 15: 1508, 1510; page 28, lines 21-27) of Hooley et al with a directive parameter which sets a directional characteristic for the loudspeaker as a narrow directivity and sets another directional characteristic for the loudspeaker as a wide directivity as taught in Yanagawa et al (col. 1, lines 1-22) to prevent howling.

Claim 4 has been analyzed and rejected according to claims 1 & 3.

Re Claim 6, Hooley discloses the audio signal supply apparatus according to claim 3, but fails to disclose wherein a frequency property correction unit that corrects a frequency property for the signals obtained by branching the audio signal is arranged between the branching unit and the first processing unit. However, Yanagawa et al does (fig. 1: DF1-DFm).

Taking the combined teachings of Hooley et al and Yanagawa et al as a whole, one skilled in the art would have found it obvious to modify the audio signal supply apparatus according to Hooley et al with wherein a frequency property correction unit that corrects a frequency property for the signals obtained by branching the audio signal is arranged between the branching unit and the first processing unit as taught in Yanagawa et al (fig. 1: DF1-DFm) to filter out noise.

4. Claims 2 & 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hooley et al, WO 01/23104 A2 and Yanagawa et al, US Patent 5,233,664 as applied to claim 1 above, and further in view of Johnson, US Patent 6,181,796 B1.

5. Re Claim 2, the combined teachings of Hooley et al and Yanagawa et al disclose the audio signal supply apparatus according to claim 1, but fails to disclose wherein an amount of delays indicated by delay control information generated based on the second directivity parameter is 0 or an equal amount. However, Johnson does (col. 10, lines 16-22).

6. Taking the combined teachings of Hooley et al and Johnson as a whole, one skilled in the art would have found it obvious to modify the audio signal supply apparatus according to Hooley et al with wherein an amount of delays indicated by delay control information generated based on the second directivity parameter is 0 or an equal amount as taught in Johnson (col. 10, lines 16-22) to compensate for sounds in a non-sound proof environment.

7. Claim 5 has been analyzed and rejected according to claims 1-3.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George C. Monikang whose telephone number is 571-270-1190. The examiner can normally be reached on M-F. alt Fri. Off 7:30am-5:00pm (est).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

George Monikang

11/25/2007


XU MEI
PRIMARY EXAMINER